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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,121	02/27/2002	Paul Evans	858063.458	5655

500 7590 02/25/2003

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EXAMINER

DINH, TUAN T

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 02/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/085,121	EVANS, PAUL	
	Examiner	Art Unit	
	Tuan T Dinh	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

Page 5, line 5, change "connector 8" to --the support pillar 8--.

Appropriate correction is required.

Claim Objections

1. Claims 1-10, and 12-17 are objected to because of the following informalities:

Claim 1, line 8, "the topside circuit components" should be -- the set of topside circuit components --.

Claim 1, line 10, "the conductive tracks" has no antecedence basis.

Claim 1, line 11, "module in a stack" should be --in a stack of module--.

Claim 2, lines 2-3, "a module" should be -- the module --.

Claim 5, line 1, "a support pillar" should be -- the support pillar --.

Claim 6, lines 1-2, change "...defining component" to --...defining a component--.

Claim 6, line 3, "modules in a stack" should be -- in the stack of modules --.

Claim 7, lines 2-3, " that generates transport stream data and transport stream control signals" should be -- that generates the transport stream data and the transport stream control signals --.

Claim 8, line 2, " on transport stream data and transport stream control signals" should be -- on the transport stream data and the transport stream control signals --.

Claim 9, line 2, " transport stream data" should be --the transport stream data --.

Claim 10, line 2, " a device that does not utilize transport stream data and transport stream control signals" should be - - a device that does not utilize the transport stream data and the transport stream control signals - -.

Claim 11, line 8, " convey transport stream data and transport stream control signals" should be - - convey the transport stream data and the transport stream control signals - -.

Claim 12, line 11, "racks" should be - - tracks - -.

Claim 12, lines 12-13, change "the topside component...component" to -the topside connector...component--.

Claim 12, lines 14-15, "of other modules in the stack" should be -of other stack of modules--.

Claim 12, line 15, "the conductive tracks" has no antecedence basis.

Claim 12, lines 15-16, " convey transport stream data and transport stream control signals" should be - - convey the transport stream data and the transport stream control signals - -.

Claim 13, line 2, "a topside" should be -the topside--.

Claim 14, lines 2-3, " that generates transport stream data and transport stream control signals" should be - - that generates the transport stream data and the transport stream control signals - -.

Claim 15, line 2, " on transport stream data and transport stream control signals" should be - - on the transport stream data and the transport stream control signals - -.

Claim 16, line 2, " transport...data" should be -- the transport stream data --.

Claim 17, line 2, " a device that does not utilize transport stream data and transport stream control signals" should be - - a device that does not utilize the transport stream data and the transport stream control signals - -.

Claim 19, line 8, " convey transport stream data and transport stream control signals" should be - - convey the transport stream data and the transport stream control signals - -.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-3, 6-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Khosrowpour et al. (U. S. Patent 6,477,593).

With respect best understood of claim 1, Khosrowpour discloses a stackable module (100, column 4, lines 9-10) as shown in figures 1-4 for a processor system comprising:

a support plate (120;130, column 4, line 12) having a topside and an underside;

a set of topside circuit component (see figure 1, each of board 120 or 130 having a plurality of components mounted on each board) mounted on the topside of the support plate (120, 130);

topside and underside connectors (board 120 having top connector (122A, 122B) and bottom connector (122C, 122D)) mounted to the topside and underside of the support plate; and

first and second set of conductive tracks (114A, 114B) connected directly between the topside and underside connectors and connecting the topside connector to the set of topside circuit components respectively; the topside and underside connectors being engageable with respective underside connector and topside connector of other modules (for example board 130), the first and second conductive track arranged to convey transport stream data transport stream control signals between modules in a stack.

With respect best understood to claims 11, 13, and 18, Khosrowpour, see figures 1-4, discloses a stack of modules in a processor system, the stack comprising:

a main board (motherboard-110) having an interface connector (112A, 112B) and a set of main board components (see figure 1), the interface connector providing a set of pins for conveying transport stream data and transport stream control signals (see figure 3);

at least one module (120, 130) comprising a support plate having topside and underside, the topside having a set of circuit components (see figure 1), the support

plate with topside and underside connectors (122A-122B, 122C-122D) mounted to topside and underside of the support plate respectively, the underside connector (122C-122D) being connected to the interface connector (112A-112B) of the main board (110) for the conveying transport stream data and the transport stream control signals from the at least one module to the interface connector of the main board.

With respect best understood to claim 12, Khosrowpour, see figures 1-4, discloses a stack of modules in a processor system, the stack comprising:

- a main board (110) having an interface connector (112) and a set of main board components (see figure 1), the interface connector providing a set of pins;

- at least one module (120, 130) comprising:

- a support plate having a topside and an underside;

- a set of topside circuit components mounted on the topside of the support plate;
 - a topside connector mounted to the topside of the support plate; an underside connector (122C-122D) connected to the interface connector (112) of the main board (110);

- first and second set of conductive tracks (114) connected directly between the topside connector and the underside connector and the topside connector to the topside circuit component, the underside connector and the topside connector being engaged with respective underside connectors and topside connectors of the other stack of modules, the first and second conductive tracks arranged to convey the transport stream data and the transport stream control signals between the stack of modules.

Regarding claim 2, Khosrowpour, see figures 1-4, discloses each of the topside and underside connectors comprises a set of pins for carrying memory access signals to enable the module to function as an external memory interface.

Regarding claim 3, Khosrowpour, see figures 1-4, discloses the topside connector is a receptacle and the underside connector is a plug (see figure 3).

Regarding claim 6, Khosrowpour, see figures 1-2, discloses a connector space-defining component (flat chip) that extends from the support plate by a distance calculated to define the minimum spacing between modules in the stack.

Regarding claims 7-10, 14-17, Khosrowpour, see figures 1-4, discloses the circuit components (124, 134) capable of being multiplexor or device constitute a transport stream generating device that generate the transport stream data and the transport stream control signals.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4-5, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khosrowpour ('593) in view of Mitra et al (U. S. Patent 5,707,242).

Khosrowpour discloses all of the limitations of the claimed invention, except for a support pillar provided on the support plate so as to pass through a through hole.

Mitra shows stackable circuit boards (1-3) as shown in figures 1-3, each having a support pillar (7-10) including pins so as to pass through through-holes (27).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have teaching's Mitra to employ the system of Khosrowpour in order to provide a direct electrical contact between board to board.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Brekosky et al., and Glenn disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TD
February 22, 2003



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